

GENERAL

1. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES ADOPTED BY THE AASHTO ELEVENTH EDITION 1977.
2. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318-77).

LIVE LOAD

1. AASHTO HS 20-44.
2. MILITARY LOADING:
THIS LOADING CONSISTS OF ONE MILITARY VEHICLE PER LANE HAVING 2 AXLES SPACED AT 4' C. TO C. THE WHEEL SPACING IS 6'. TOTAL WIDTH OF VEHICLE IS 10'. AXLE LOADS ARE 24 kips. CENTER OF WHEEL TO EDGE OF CURB IS 2 FT.
3. TOLLROAD LOADING:
THIS LOAD CONSISTS OF ONE VEHICLE TRAIN PER LANE HAVING 7 AXLES SPACED AT 10', 4', 26', 4', 12', 20' RESPECTIVELY, MEASURED FROM THE FIRST AXLE ONWARDS, WHEEL SPACING IS 6'. WIDTH OF VEHICLE IS 10'. AXLE LOADS ARE 18 kips PER LANE.

DEAD LOAD

1. SUPERSTRUCTURE CONCRETE: UNIT WEIGHT OF CONCRETE IS 0.156 K/CU.FT. (INCLUDES REBAR & PRESTRESSING.)
2. BRIDGE DECK OVERLAYS:
USED FOR DESIGN: 1 1/2" OVERLAY PLUS ALLOWANCE FOR FUTURE WEARING SURFACE TOTALS 0.05375 K/SQ.FT.
3. CURBS AND BARRIERS
AT EDGES OF STRUCTURE: 0.45 K/LIN. FT., AT MIDDLE OF STRUCTURE: 0.57 K/LIN. FT.

OTHER LOADINGS

1. DIFFERENTIAL TEMPERATURE:
ASSUMED THAT THE TOP SLAB CAN BE 18°F WARMER OR 9°F COLDER THAN THE REST OF THE BOX GIRDER.
2. UNIFORMLY DISTRIBUTED WORKING LOAD:
SUPERSTRUCTURE HAS BEEN DESIGNED TO CARRY CONSTRUCTION LOADS OF 0.01 K/SQ. FT.

MATERIAL PROPERTIES

1. COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS: $F'_c = 5000$ psi
2. ALLOWABLE STRESSES AT SERVICE CONDITIONS:
COMPRESSION: $0.4 \times 5000 = 2000$ psi
TENSION: $= 0$ psi (SEE DESIGN DATA #7)
3. ALLOWABLE STRESSES AT TRANSFER:
COMPRESSION: $0.55 \times F'_c (4000) = 2200$ psi
TENSION: $= 0$ psi (SEE MISC. DESIGN DATA #7)
4. SHEAR STRESSES:
TENSION: $v_c = 2 \sqrt{F'_c} = 141$ psi
5. THERMAL COEFFICIENT $= 6 \times 10^{-6} / ^\circ F$
6. SHRINKAGE STRAIN: $\epsilon = 200 \times 10^{-6}$
7. CREEP COEFFICIENT: $\phi = 2.00$ (SEE NOTE 7 DWG. SHEET 1000)
8. MILD STEEL REINFORCEMENT USED IS GRADE 60 STEEL.
9. PRESTRESSING STEEL:
STRANDS SHALL BE 7-WIRE LOW RELAXATION STRAND IN ACCORDANCE WITH ASTM A416 GRADE 270 STEEL. PRESTRESSING FORCES SHOWN ON DRAWINGS ARE TENDON EFFECTIVE FORCES AFTER LOSSES DUE TO SHORTENING, CREEP, RELAXATION AND FRICTION TAKE PLACE.

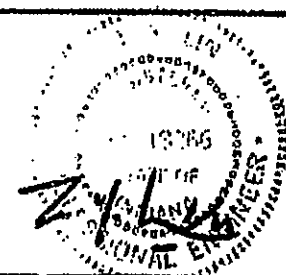
MISCELLANEOUS DESIGN DATA

1. TEMPERATURE INTERVAL:
AT CONSTRUCTION: ASSUMED 60°F
MAX. FALL: -45°F
MAX. RISE: +40°F
2. CONCRETE COVER
TOP STEEL IN TOP SLAB: 1 1/2" MIN.
ALL OTHER FACES: 1" MIN.
3. CONSTRUCTION WAGON (TRAVELLER) WEIGHT, FOR EITHER EBL OR WBL, TOTAL WEIGHT OF EACH CONSTRUCTION WAGON, INCLUDING COUNTERWEIGHTS, SCAFFOLDINGS, FORMS AND ALL CONSTRUCTION LOADS SHALL NOT EXCEED 130 TONS.
4. THE MINIMUM THICKNESS OF THE BOTTOM-SLAB SHALL NOT BE LESS THAN 1/30 OF THE CLEAR SPAN BETWEEN THE FILLETS OR 5 1/2" WHICHEVER IS GREATER.
5. DIMENSIONS SHOWN FOR THE WEB THICKNESS OF THE BOX GIRDERS ARE THE MINIMUM REQUIRED. DIMENSIONS OF THE WEB THICKNESS MAY BE INCREASED TO PROVIDE THE NECESSARY PRESTRESSING CLEARANCES.
6. DEVELOPMENT OF REINFORCEMENT:
REINFORCEMENT LAPS, HOOKS, AND SPLICES SHALL SATISFY PROVISIONS OF AASHTO SECTION 1.5.13 THROUGH 1.5.22.
7. ALLOWABLE STRESSES:
ADEQUATE NON-PRESTRESSED REINFORCEMENT IS PROVIDED TO SUPPORT ANY CONCRETE TENSION STRESSES DURING CONSTRUCTION AND LONG-TERM LOADINGS.
8. MECHANICAL, ELECTRICAL & PRESTRESSING DUCTS:
PROVIDE PENETRATIONS AS REQUIRED FOR PRESTRESSING DUCTS, SUPERSTRUCTURE DRAINAGE AND ELECTRIC CONDUIT IN GIRDERS, DIAPHRAGMS AND EXPANSION JOINTS.
9. REINFORCING
DETAILS OF REINFORCING AT LOCATIONS NOT EXPLICITLY SHOWN SHALL BE REINFORCED AS INDICATED FOR SIMILAR CONDITIONS.

DATE
REVISION
N

T. Y. LIN INTERNATIONAL
STRUCTURAL ENGINEERS

REID, QUEBE, ALLISON, WILCOX AND ASSOCIATES INC.
CONSULTING ENGINEERS



WALSH CONSTRUCTION COMPANY

A DIVISION OF GUY R. ATKINSON CO.
DARIEN, CONNECTICUT

SHEET TITLE

GENERAL NOTES - SUPERSTRUCTURE

CLINE AVENUE EXTENSION OVER INDIANA HARBOR CANAL
BRIDGE FILE: 812-45-2548 CONTRACT NO. B-11812
INDIANA STATE HIGHWAY COMMISSION

SHEET N.

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